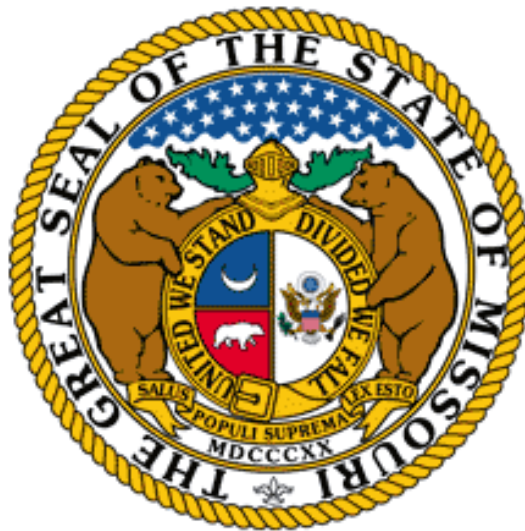


**Preliminary Report**  
**of the**  
**Missouri Earthquake Insurance Task Force**



**Missouri Department of Insurance,  
Financial Institutions  
& Professional Registration**

**March 20, 2008**

This report serves as a preliminary review of the earthquake insurance market in the State of Missouri with a summary of states' experiences and policy proposals. The report outlines the complexities of catastrophic insurance coverage, changes in the earthquake insurance market and concerns affecting the availability and affordability of earthquake coverage.

### **Missouri Earthquake Insurance Task Force**

Gov. Matt Blunt asked Director Ommen to lead the new Missouri Earthquake Insurance Task Force on November 21, 2007. The group's mission is to provide a comprehensive report with recommendations on how to improve structural safety standards, insure private and public infrastructure and promote continued economic growth in areas near the New Madrid fault. The governor named the following members to serve on the commission:

- Jim Boone, St. Louis, Associated General Contractors of St. Louis
- Janis Borges, Columbia, State Farm Insurance Company
- Charlie Brown, Kennett, Missouri Association of Independent Agents
- Charles Burhan, Shaumburg, IL, Liberty Mutual Insurance Group
- Darwin Copeman, Cameron, Cameron Mutual Insurance Company
- Mimi Garstang, Rolla, State Geologist of the Missouri Department of Natural Resources
- Chris Krehmeyer, St. Louis, Beyond Housing, consumer advocate
- Stacy Mansfield, Jackson, Southeast Missouri Homebuilders Association
- Dave Monaghan, Jefferson City, American Family Mutual Insurance Company
- Randy Noland, Maryland Heights, Missouri Association of Building Officials and Inspectors
- William Placht, Union, Missouri Association of Code Administrator
- Theodore Pruess, Hazelwood, Larson Engineering
- Kent Runyan, Columbia, Shelter Mutual Insurance Company
- Bob Schreiber, St. Louis, Auto Club Family Insurance Company
- James Swope, Overland Park, KS, Farmer's Insurance Company
- Mike Voiles, Jefferson City, Farm Bureau
- James Wilkinson, Memphis, TN, Central United States Earthquake Consortium
- Sen. Maida Coleman, Missouri Senate, District 5
- Sen. Rob Mayer, Missouri Senate, District 25
- Rep. Billy Pat Wright, Missouri House of Representatives, District 159
- Rep. Terry Swinger, Missouri House of Representatives, District 162

The Earthquake Insurance Task Force met on December 17, 2007, at the Wainwright State Office Building in St. Louis. The task force discussed earthquake insurance coverage statistics and trends, and information about the catastrophic insurance market both in Missouri and on a national scale. In addition, each insurance company representative on the task force reported on his/her company's changes in earthquake insurance coverage and deductibles over the last 10 years.

The task force met again on January 18, 2008, at the MoDOT Transportation Management Center in Chesterfield. The meeting included presentations about national trends in catastrophic insurance and state programs in California, Louisiana, Illinois and Arkansas. The task force

discussed SB 877 (2008), which would create the Missouri Catastrophic Fund, and the impacts of adopting building codes and retrofitting to minimize earthquake damage.

### **Catastrophic Insurance Coverage**

Insurable events are ideally both predictable and independent. A predictable event is one in which meaningful probabilities can be assigned regarding the likelihood of an occurrence and the likely loss (claims) should the event occur. Events become more predictable the more they happen (i.e. a larger sample set is created). Independent events are ones for which the occurrence of one event is unrelated to the occurrence of a second event. Automobile accidents are good examples of ideal insurable events – they happen often so the likelihood and losses are more predictable, and they only impact a few policyholders at a time when they occur.

Catastrophic risks such as earthquakes are less ideal insurable events because the occurrence is very infrequent, so it is difficult to predict the likelihood or potential losses, and an event would impact a large number of policyholders. Because historical data is limited or practically non-existent, insurers rely on catastrophe models to predict losses. Catastrophe models are also used by reinsurers to determine risk and by rating organizations to develop insurer ratings (see “Availability and Affordability” below).

### **Market Changes**

Missouri is the third largest market for earthquake insurance coverage in the United States, after California and Washington. In 2006, Missouri homeowners and business owners spent nearly \$75.9 million on earthquake coverage. Currently, 38% of Missouri homes have earthquake insurance coverage.

One model commonly used by insurance companies estimates that a 7.2 magnitude earthquake, similar to one of the earthquakes experienced in the New Madrid area in 1811 and 1812, would cause \$80 billion in losses, or about twice the insured losses experienced due to Hurricane Katrina (both based on 2006 dollars).

The market has experienced some volatility in recent years. Since 2000, 43 companies covering 46,700 residences in Missouri have left the market. In that same time, 27 companies began offering earthquake coverage in Missouri and in 2006 they covered 38,162 residences. Over the last decade, coverage has remained fairly affordable and available with a noticeable contraction in the market and a constant upward pressure on prices.

The companies on the task force have taken a variety of actions when it comes to changes in earthquake coverage over the past 10 years. Some companies have raised their minimum deductibles. Some no longer write policies for some properties nearest the predicted epicenter of an earthquake or refuse to cover older buildings or masonry constructed buildings. One company has moved to more specific underwriting of individual buildings, evaluating structures, soils and other aspects of the property. Some no longer write earthquake coverage at all. However, some companies have not changed their coverage or have only made a few minor changes in the most heavily impacted areas. Insurer earthquake coverage changes appear to be inconsistent throughout the market, but most companies have made some changes.

## **Availability and Affordability**

One of the issues affecting the availability and affordability of earthquake insurance is reinsurance. Companies buy reinsurance to spread risk and, in effect, insure their losses. About 50% of catastrophic coverage is protected, or “backed up”, by reinsurance. The reinsurance market is global and catastrophic events including the 9/11 terrorist attacks and Hurricane Katrina significantly impact the reinsurance market. Some smaller insurers indicated that reinsurance covers a larger portion of their risk because of their limited ability to spread risk across a geographic area. Therefore, reinsurance rates have a significant impact on earthquake insurance rates.

Also due to recent catastrophes, financial rating organizations such as A.M. Best and Standard & Poor’s require that companies with catastrophic exposure significantly increase reserves or face financial rating downgrades. Reserves are liabilities that reflect an insurer’s financial obligation to “back up” all policies it has issued. Increasing reserve requirements therefore reduces an insurer’s capacity to write new business, since each new policy must now be “backed up” by additional reserves.

Another issue affecting earthquake insurance is the degree of scientific uncertainty in the modeling that insurers use to predict losses. This makes the market vulnerable to significant revisions in risk estimates. For example, revised geologic information led at least one modeler to significantly increase the assessed earthquake risk to the St. Louis area. In addition, the development of “loss amplification factors” in catastrophe models after Hurricane Katrina impacted earthquake models. Some examples of loss amplification factors are civil unrest and prolonged disruption of services.

Missouri does not have a state building code and many jurisdictions in southeast Missouri have not adopted local building codes. Some buildings in this area are designed to code, but insurers have difficulty identifying these buildings. Building a home to a code such as the International Building Code, which includes requirements for specific seismic and soil conditions, helps prevent or mitigate damage in the event of an earthquake. In addition, some detailed soil information that shows specific hazard areas does exist, but it is currently not collected in a format readily available and understandable by consumers or private entities such as insurers, engineers, developers or land use planners.

## **Building Code Options**

The International Code Council (ICC) develops building codes used to guide the construction of residential and commercial buildings. It is estimated by this organization that every dollar spent on building safer and stronger buildings on average reduces losses by \$4. Buildings built to the International Code are engineered to prevent total collapse of a building and thus minimize loss of life in the event of a major earthquake. The ICC also develops property maintenance codes for existing buildings and publishes guides on structural and nonstructural retrofits, such as securing heavy objects and hanging fixtures, and supporting walls, floors, foundations, etc. Retrofits, especially those that are structural in nature, may be cost-prohibitive.

## **Insurance Options**

### *National Trends*

The Homeowners Defense Act of 2007 (H.R. 3355) establishes a completely voluntary federal/state consortium to leverage economies of scale and the diversification of the type and location of catastrophic risks to achieve reinsurance costs lower than those available to states independently. It also creates a federal loan program to provide post-event financing to qualified state reinsurance programs while those programs accumulate capital sufficient to pay their reasonably anticipated reinsurance losses. State catastrophic reinsurance programs must satisfy specific requirements, including reinsuring all personal residential lines of insurance and only risks in the state deemed truly catastrophic by the Treasury Secretary, before they can qualify for the consortium and loan programs. This bill passed in the House of Representatives on November 7, 2007.

### *California*

In 1994 the magnitude 6.7 Northridge earthquake caused nearly \$18 billion in damage in the Los Angeles area. Shortly after this earthquake, 90% of insurers stopped writing earthquake insurance in California. To insure this risk, the state of California created the California Earthquake Authority in 1996. The authority is a state-backed insurance pool that covers residential properties. It is funded by premiums paid by its customers, contributions from and assessments on participating insurance companies, borrowed funds, reinsurance, and return on invested funds. The average annual premium for earthquake coverage is \$500, with ranges up to \$3,000. The authority's base-limits policy for homeowners includes: 1) dwelling coverage limited to the insured value on the home as stated on the companion homeowner's policy; 2) \$5,000 in personal property coverage; and 3) \$1,500 for additional living expenses or loss of use of the property. The authority's total claims-paying capacity now exceeds \$8 billion. Even with this coverage available, less and less property owners have been purchasing earthquake coverage. According to the California Department of Insurance, 33% of homes were covered by earthquake insurance in 1996, but in 2006 just 12% of homes maintained coverage.

### *Arkansas*

Arkansas passed legislation in 1999 that created a Market Assistance program (MAP). It assists policyholders in purchasing residential earthquake coverage in the private market. The MAP has assisted about 8,000 policyholders and has a current exposure of \$688 million. Any financially sound insurer with proper personnel and experience can participate in the MAP, but currently the only participant is a surplus lines insurer through a Lloyd's syndicate. Access to the plan requires participating insurers to write underlying personal lines property policies, and they must give 90 days notice to withdraw from the program.

In addition, the Arkansas Earthquake Authority was also created in 1999 in response to concerns from both insurers and policymakers about the magnitude of individual company exposure. The authority can only write policies when there are no insurers writing through the MAP. The authority can also write policies when MAP rates are: 1) substantially higher than rates the authority could offer; 2) it is in the best interest of citizens; and 3) upon concurrence of the Senate and House insurance committees. Because the MAP has an active insurer participating, the authority has not been activated.

### *Illinois*

The Illinois FAIR plan was created in 1968 and offers property insurance to qualified applicants in Illinois who are unable to buy insurance through the private insurance market for reasons beyond their control. In 1991, the plan began offering earthquake coverage as an endorsement to dwelling policies. The most commonly purchased coverage has a 5% deductible and the rates are based on frame versus masonry construction. Only 8% of the 8,000 policies covered by the FAIR plan include the earthquake endorsement. Missouri administers its own FAIR plan, but it does not offer earthquake endorsements to its policyholders.

### *Louisiana*

Louisiana has a \$100 million incentive fund to encourage insurance companies to enter the residual market and write business in the state. The fund has surplus requirements so that eligible companies are well capitalized to handle claims.

### *Senate Bill 877/House Bill 1918*

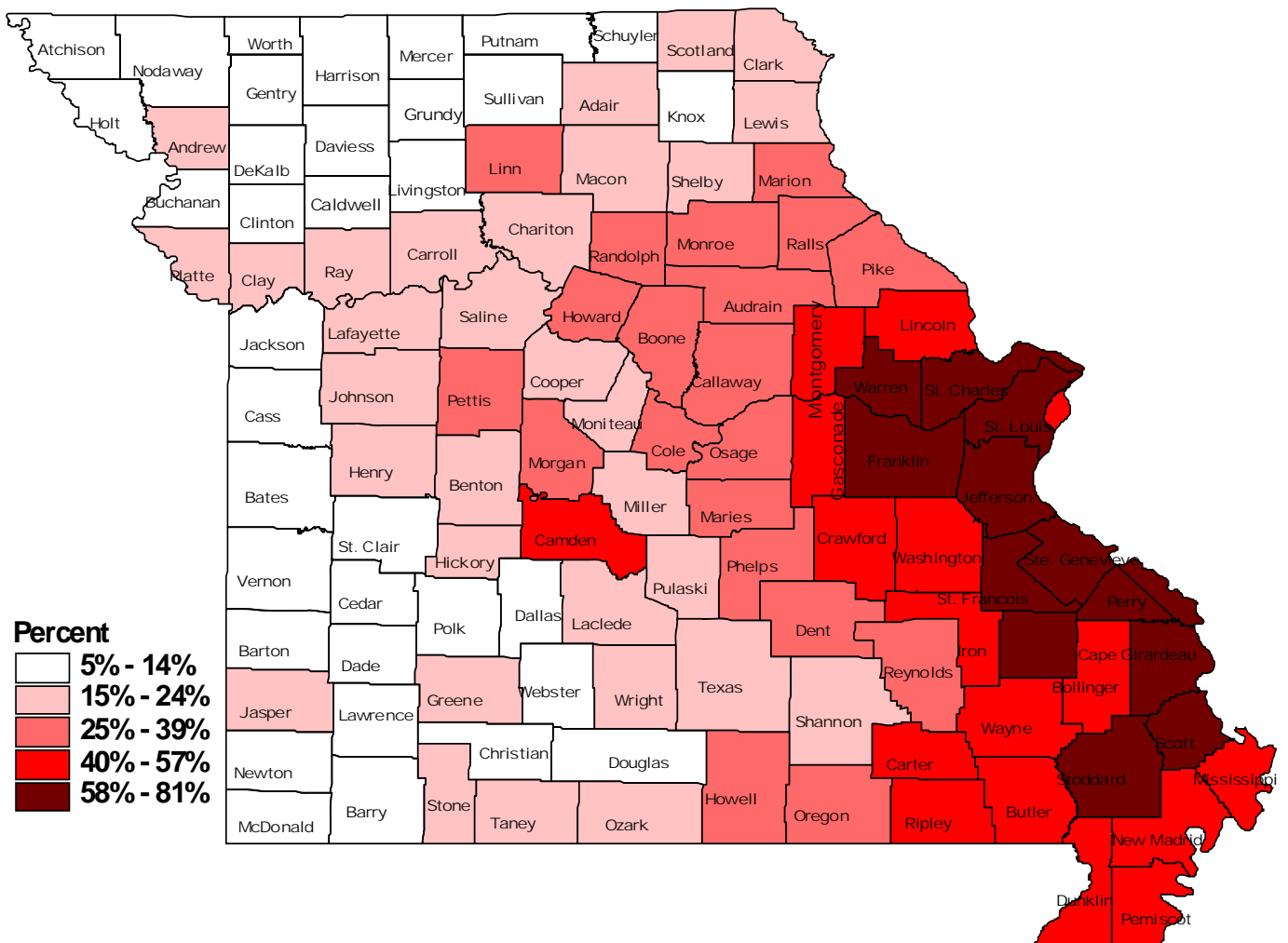
Senate Bill 877 and House Bill 1918 (both are 2008 bills) propose to create a Missouri Catastrophe Fund. All property insurers offering personal earthquake coverage would be included in the fund. The purpose of the fund is to help protect property insurers against insolvencies caused by earthquakes. The fund would consist of premiums paid by property insurers offering personal earthquake coverage, bond revenues and appropriated state funds. The director of DIFP would set reimbursement premiums for the backstop coverage. To provide startup monies, insurers would pay an advance premium of \$1,000. The director would enter into a contract with each insurer promising to reimburse the insurer a percentage of its losses in excess of the insurer's retention, plus 10% of that amount to cover loss adjustment expenses. The proposal authorizes the director to issue bonds if monies in the fund are insufficient to pay reimbursements. It also allows the General Assembly, in fiscal years in which there are no outstanding obligations, to make an appropriation of up to 10% of the investment income from the fund to local or state agencies, public and private educational institutions and non-profit programs intended to improve catastrophic preparedness.

Proponents of this proposal believe that the private market is unwilling to cover earthquake risk because of the catastrophic exposure and cost of reinsurance; therefore, the government needs to put a mechanism in place to spread the risk over time and take proactive steps **now** to pay for a potential event in the future. Opponents believe that a market assistance program would be a better approach to help match consumers and agents with insurers willing to provide earthquake insurance. They believe that a catastrophe fund will increase cost for consumers by reducing access to earthquake coverage in the private market and requiring subsidies of residents most exposed to catastrophic loss.

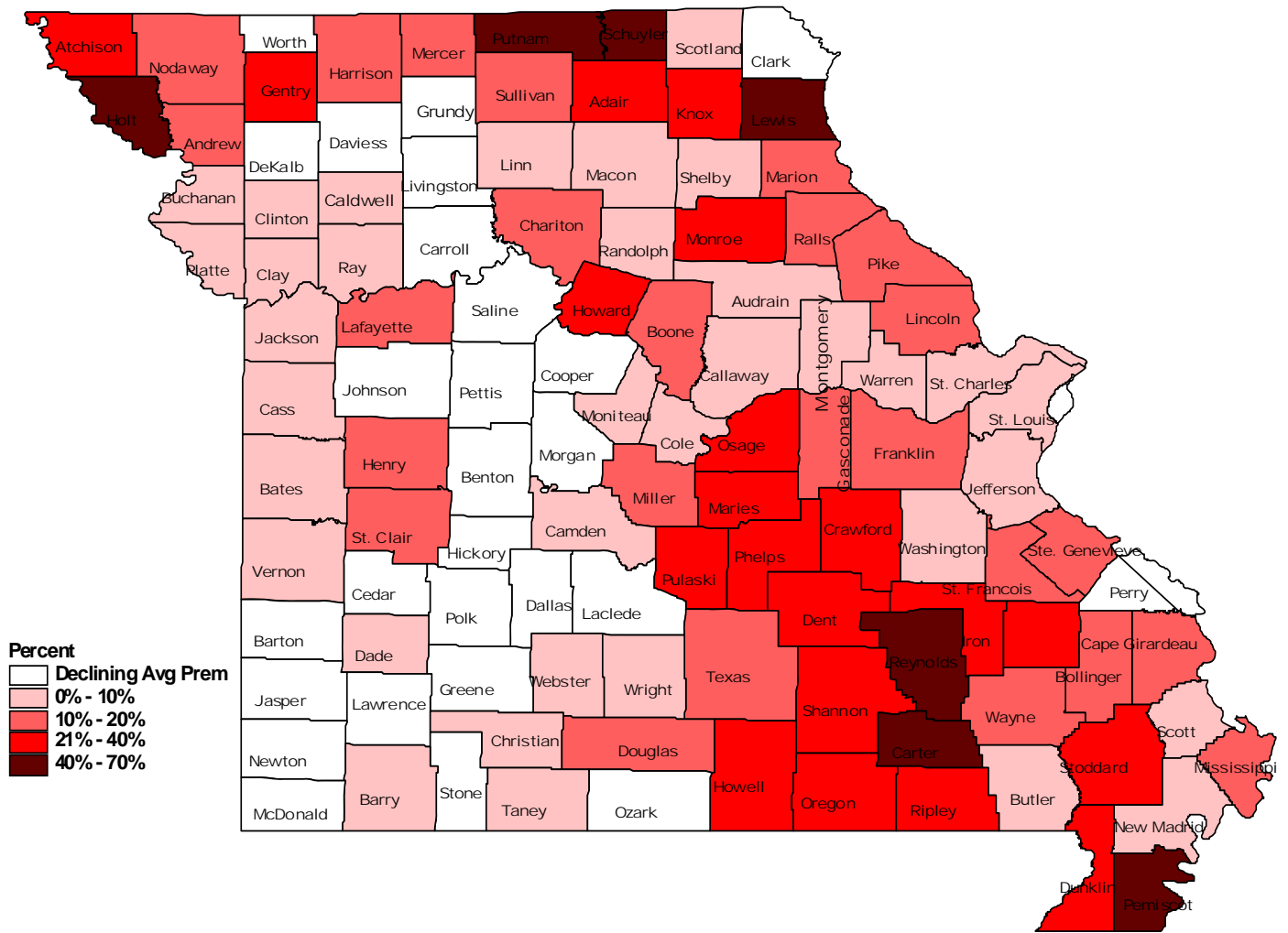
### **Conclusion**

The task force plans further study of earthquake insurance coverage and building requirements in Missouri. It anticipates completing its final report and recommendation no later than December 1, 2008.

## Percent of residential policies with earthquake coverage, 2006



## Percent change in cost of earthquake coverage, 2000-2006

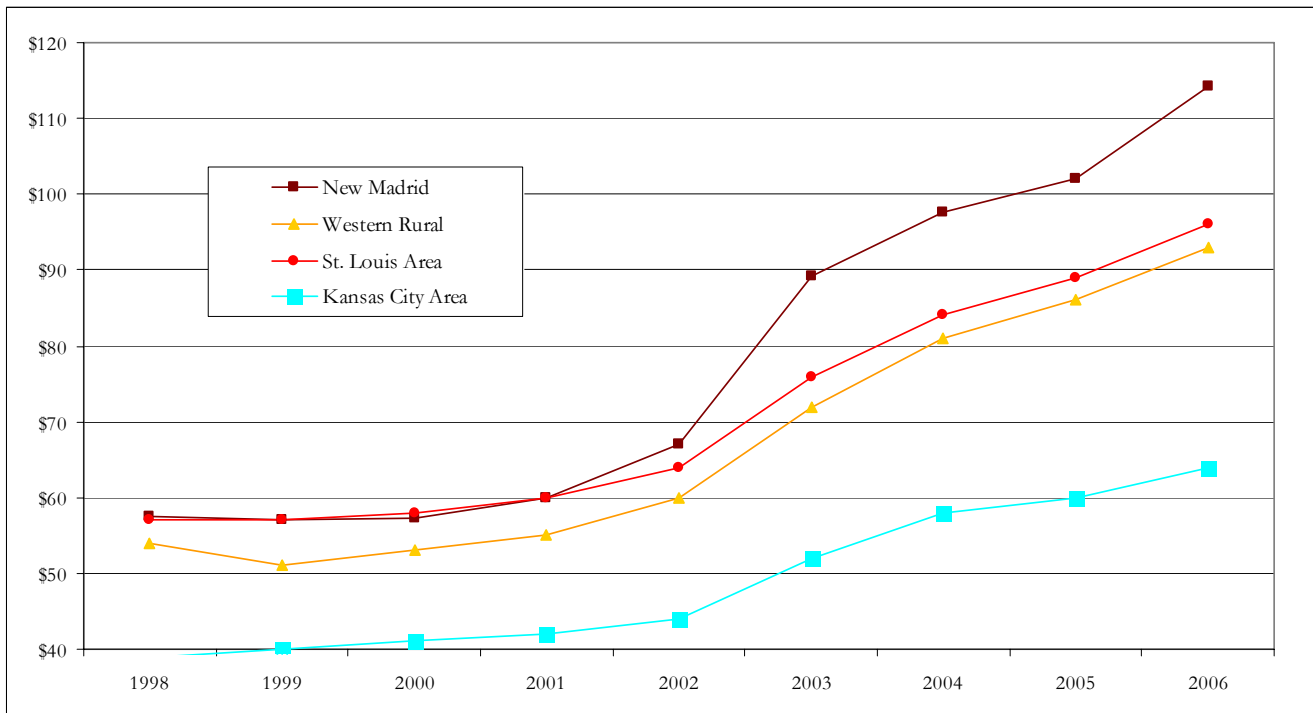


## Percent of residential policies with earthquake coverage, 1998-2006

	1998	1999	2000	2001	2002	2003	2004	2005	2006	% Point Change
New Madrid Area	60.9%	59.3%	60.2%	59.4%	59.0%	57.7%	57.2%	57.1%	53.0%	-7.9%
St. Louis and Surrounding Counties	70.8%	72.1%	71.1%	74.3%	71.7%	70.8%	69.7%	68.3%	64.4%	-6.4%
Non-Metro Eastern Missouri	60.9%	60.7%	59.8%	58.6%	58.7%	57.9%	57.1%	56.5%	54.5%	-6.5%
Kansas City Area	19.5%	18.9%	17.9%	17.3%	16.3%	15.2%	14.1%	13.5%	12.8%	-6.7%
State Wide	44.6%	44.8%	43.6%	43.0%	42.7%	41.7%	40.7%	39.8%	37.7%	-6.9%



**Annual cost of earthquake coverage, 1998-2006**



**Ratio of earthquake premium to remainder of residential policy premium, 2006**

